

## Evaluating Expressions

Example :

Evaluate the expression :  $\log_{\frac{1}{81}} \left(\frac{1}{3}\right) \cdot 2 \log_{64} 4$

$$\begin{aligned} \log_{\frac{1}{81}} \left(\frac{1}{3}\right) \cdot 2 \log_{64} 4 &= \frac{1}{4} \log_{\frac{1}{81}} \left(\frac{1}{81}\right) \cdot \frac{2}{3} \log_{64} 64 \\ &= \frac{1}{6} \end{aligned}$$

$$\log_a b^c = c \log_a b$$

$$\log_a a = 1$$

**Evaluate each expression.**

1)  $\log_{\frac{1}{36}} 6 \cdot \log_{81} 3$

Answer

2)  $\log_{\frac{1}{25}} 5 + 4 \log_{32} 2$

# PREVIEW

Gain complete access to the largest  
collection of worksheets in all subjects!

Members, please  
log in to  
download this  
worksheet.

Not a member?  
Please sign up to  
gain complete  
access.

[www.mathworksheets4kids.com](http://www.mathworksheets4kids.com)

3)  $\log_{\frac{1}{27}} 3 - \log_{16} \left(\frac{1}{4}\right)$

Answer

5)  $\log_{125} 5 \cdot 3 \log_{\frac{1}{36}} \left(\frac{1}{6}\right)$

Answer

7)  $\frac{1}{6} \log_{16} 4 - \log_8 \left(\frac{1}{2}\right)$

Answer

9)  $\log_{36} 6^{-4} \cdot \log_{81} 3^5$

Answer

10)  $\log_{\frac{1}{64}} \left(\frac{1}{4}\right) + 5 \log_{32} 2$

Answer